



National Aeronautics and  
Space Administration

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**BY HAND DELIVERY**

Mr. William Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, NW, Room 222  
Stop Code 1170  
Washington, DC 20554

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Re: Ex Parte Presentation of NASA concerning Ex Parte  
Filings by Suite 12 Group, November 24, 1993  
CC Docket No. 92-297

Dear Mr. Caton:

On November 24, 1993, Suite 12 Group ("Suite 12"), petitioner in the above-referenced rulemaking proceeding, filed on an ex parte basis a report by Bernard Bossard ("Bossard") which purports to show that LMDS will not interfere with the ACTS satellite and that LMDS and the Fixed-Satellite Service (FSS) are therefore compatible.

NASA feels compelled to respond to this inaccurate and misleading report to ensure that the Commission has the complete information it needs for its pending decision on the issues raised in the rulemaking.

The primary reason that the proposed LMDS is incompatible with the FSS is not the interference problem discussed in Bossard but interference from FSS transmitting earth stations into LMDS subscriber receivers. NASA has provided information on this source of incompatibility in its comments submitted in this proceeding. All of the satellite interests that have commented on this proposed rulemaking as well as NTIA have reached the same conclusion as NASA: the FSS and LMDS are incompatible because the LMDS will receive unacceptable interference from the FSS uplink earth stations. The Commission should not be misled by the failure of Suite 12 to address the problem of interference into LMDS receivers in their ex parte presentation and their assertion that a lack of interference from LMDS to FSS space stations (even if it were true) makes the two services compatible.

NASA emphasizes that it has filed comments and reply comments in this proceeding not primarily due to a concern about

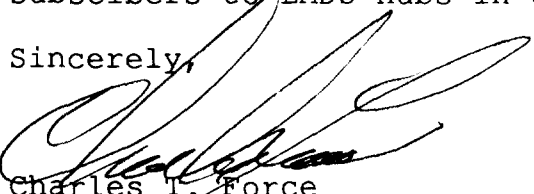
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interference to the ACTS satellite. NASA has invested close to \$1 billion of public money to develop and demonstrate the high risk technology that U.S. companies need to exploit the potential markets for new innovative services that satellites can deliver at 30/20 GHz. The Commission has known of the NASA ACTS program for many years. In NASA's opinion, adoption of an LMDS allocation in the 27.5-29.5 GHz band would be a disservice to the American people. It would foreclose the opportunity for the United States to reap the benefits of new communications markets, creation of new jobs, and contributions to the new national information infrastructure that the space communications industry is already beginning to create using technology developed in the ACTS program.

With regard to the claims in Bossard of errors in the NASA interference analysis, we reaffirm our belief that a fully implemented LMDS may cause interference to FSS space station receivers, especially those in low-earth orbit. NASA does not believe, nor has it alleged that LMDS in its early stages of implementation would interfere with ACTS. We do not wish to engage in a "dB war" by correspondence and we therefore make only one observation about the inaccuracies contained in Bossard. NASA assumed an LMDS antenna gain of 0 dB toward an FSS space station in its interference analysis. Rather than being prejudicial to LMDS as claimed in Bossard, using 0 dB for LMDS antenna gain is quite consistent with ITU-R Recommendation 699-1 which contains internationally accepted reference patterns for fixed service antennas to be used for interference assessment. Calculation of LMDS antenna gain using the appropriate formulas in Recommendation 699-1 for cases where the ratio between antenna dimensions and the wavelength is less than 100 results in values for gain toward an FSS satellite located at 100° W of between 3.3 dBi and 0.3 dBi. Comparing the interference calculated using realistic values for LMDS hub antenna gain with the value of -15 dBi as used in Bossard, it follows that Suite 12 has underestimated the interference to an FSS satellite receiver in GSO by 15.3 to 18.3 dB, i.e., by a factor of 34 to 68 times. We also note that the interference levels we calculated for interference into the satellite are low because we did not include interference contributions from LMDS hubs outside of the FSS main beam or interference caused by transmissions from LMDS subscribers to LMDS hubs in our analysis.

Sincerely,



Charles T. Force  
Associate Administrator for  
Space Communications  
National Aeronautics and Space  
Administration

cc: FCC/Chairman Reed Hundt  
FCC/Commissioner James Quello  
FCC/Commissioner Andrew Barrett  
FCC/Commissioner Ervin Duggan  
FCC/Dr. Thomas Stanley  
FCC/Mr. David Siddall  
FCC/Ms. Kathleen B. Levitz  
FCC/Mr. Gerald P. Vaughan  
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FCC/Ms. Susan E. Magnotti  
FCC/Mr. Harry Ng  
FCC/Mr. Robert James  
FCC/Ms. Fern Jarmulnek  
FCC/Mr. Lawrence Petak